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MEDICAL CENTER
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DEPARTMENT OF GENETICS
School of Medicine

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Dr. Eugene Garfield Institute for Scientific Information 33 South 17th Street Philadelphia 3, Pennsylvania

Dear Gene:

Further to pick up on pending correspondence.

- 1. In re my depository proposal, I went over this in some more detail with our Mental Retardation Panel and the exposition convinced me more than ever of the necessity of tying the newspaper into it. I don't agree about the negative connotation of the word "newspaper". Perhaps this applies to the idea of a weekly so my answer is "Science Daily". It ought to be stressed that this is only the throw away mode of dissemination and that more durable formats will be consistently available for selected papers. I am enclosing a preliminary sketch diagram to suggest some of the elements of the system. MD ___just stands for medical document number by analogy with the AD, ASTIA documents. It interests me how few people have thought through the communication problem. For example, a fairly common objection to the scheme here is that so much material would be coming in that one couldn't possibly read it all! This is rather akin to my brother's reaction to Current Contents. It all gives great force to Mooer's Law which I would read as saying that except for the irrestible impact of social pressure scientists would go out of their way to remain uninformed about what their colleagues are doing," especially if it might be scooping them. Anyhow I think we will have to take pains to explain that the repository system isn't responsible for the crush of scientific documentation but that it conceivably might help in the evolution of a more rational sampling of the pertinent input.
- 2. I wouldn't necessarily want to lick the profit making journals, but I think they should get out of the business of primary documentation. They will still have plenty of work to do in organizing review journals and quite possibly some profit incentive may be important or necessary in getting people to do the work of editing and contributing to journals of this kind. But these should have the status of secondary compendia, like books, and to a greater degree than journals be sought after on the basis of apparent utility rather than a sense of necessary obligation as is the case for primary repositories. As far as people outside the system are concerned, the repositories output would of course be available at cost or on some exchange basis to anyone interested in it. There are too many political problems to imagine a world input system to the Science Daily system although the foreign grants program of the NIH suggests at least one source of available material. However, the depository would of course continue to retrieve documents from abroad for its indexing system

and if other countries were to establish their own centralized arrangements this would greatly facilitate the total retrieval of the world literature.

- 3. Gene, I hope you find some gratification in realizing that many of your ideas that you might have thought had not even sunk in over the past years are coming out again in these discussions. I am very conscious of the totality of this and do not think it would be worth the immense effort to try to identify what may or may not be unique elements in these proposals.
- 4. I am not so far from you in your critical attitudes about permuted title indexes, but at least they do represent something that can be gotten out rapidly. But why do they have to be printed out in such a clumsy way? Couldn't you set up a report generator program that would set out main heads for each new key word and print the full title in normal sequence, perhaps underlining the key word, as a subheading under it. This is the same information that is now reproduced in the key word indices but would give a far better method of scanning them. This is especially important when one has to scan for non-standard key words out of one's usual descriptor vocabulary as is the customary situation. The present very poor design of the page format on these KWIC indices is a chief limitation to their wider acceptance. But you must have been through all this for your work on Index Chemicus.
- 5. If you have picked up any citations to the following authors I would be grateful to an early note on them.

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Ferguson-Smith, Lancet,1961, 1:638.

Heald and Bailey, J. of Neurochemistry.

Rundle, Lancet,1961, 11:846.

Uchida, Lancet,1961, 11:849.

Nathan, Paul, Nature 188:77.

Griffin, 1960, Nature 187:417.
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These are all more or less recent encounters of data for which I would be anxious to see if there has been some published follow-up. I will not be at all unhappy to have the complete carbon copies but would be willing to wait another week for either the microfilm version or these specific pages.

- 6. As far as a special assignment to ISI in mental retardation I think the Panel's main feeling was that the best approach would be to needle the National Library of Medicine to develop the necessary services, by contract where it wasn't able to do it itself. This is just one of a number of fields where it would probably be useful to take the initiative of making an explicit proposal to the appropriate agencies and interested groups. The data you will have stored for setting up the citation index material should be absolutely invaluable for processing these specific jobs, and this approach removes any question of conflict of interest that might inhibit me from pressing for an otherwise laudable program on any of these committees.
- 7. In addition to Lancet, may I also ask you to put some priority onto the Journal of Neurochemistry in your reference coverage.

- 8. You asked about my level of confidence in SCI. I have no doubt at all about its role as a tool in documentation, but I don't feel that we have come up with a conclusive answer as to the way in which it should "published". A fragmentary effort might not be particularly helpful and a full scale one would involve quite a large investment, at least of time for its promotion. So I am inclined to think that it would be wise to go slowly on this aspect since there is still a lot of practical research needed to optimize it. Meanwhile, however, I think that it might be quite advantageous to advertise the availability of an SCI service on an ad hoc basis to the users of Current Contents. That is to say for a reasonable fee, like a couple of bucks a try, you would respond to inquiries for specific pages of your present print out analogous to the kinds of requests that I have just put in myself. I do not know what commitments your NIH and NSF grants have entailed with regard to your use of the SCI data in a commercial sense. I would assume that you would be entirely free to do this as a means of making them more generally available. You might also think about the possibility of soliciting a possible interest in the acquisition of microfilm copies of your 8,000-page print out but my reflections on this are not so positive unless you have some way of insuring an honest, internal use of this service. For the time being I think the ad hoc approach would be much better, that is until you were ready for a fairly wide-scale distribution. The service features of SCI continue to impress me more and more. Even before the new depository system is set up I could well imagine the utility of sending an updated citation index to a given article whenever it goes out in response to a request to the Library of Congress or the National Library of Medicine. But it will take awhile before you get to selling them on this. Meanwhile perhaps the chief virtue of starting an ad hoc service is its use in educating a number of people on the application of the system. At least your fees might help to pay for your costs in advertising and illustrating SCI in your present publications. It will be necessary to formulate and offer an explicit statement as to the referant coverage of the sample, namely just which journals are included and over what interval. This could be coded into the list of journals covered in Current Contents.
- 9. The next obvious step in SCI service we have already discussed, namely patents. Have you calculated what kind of investment would be involved in citation indexing just within the body of patent descriptions and adverse references themselves? I am afraid I couldn't advise you as to the likelihood of breaking even in this game though it seems to me obvious that there are going to be some very interesting discoveries on the validity of current patents when a deep indexing system is applied to the structure. Do you think you could get a valid copyright on a citation index of the patent literature? If so I imagine this would be a rather valuable property; if not the investment in preparing it might be a rather risky one. Ultimately the patent index should, of course, include references to patent number referants not only in the patent literature itself but also in the scientific literature at large as well as the law. Do you know whether Shepherd's allows one to find cases by reference to patent numbers?
- 10. I expect to be in Madison, Wisconsin, March 9-11 and New York 12-13 and will try to call you from New York with regard to the feasibility of our getting together there. I go to Japan for six weeks from April 6.

- II. I like your unified index proposal very much expecially as the Sunday edition of Science Daily. Your calculations should be quite useful for planning the Science Daily program. But you indicate this as a "proposal". Do you mean that you are submitting this as a concrete proposal to the NSF? I would gather that this is instead a contribution for publication as it does not have the explicit contractual offer that this would ordinarily have. Unfortunately one of the serious shortcomings of the OSIS in NSF is that it really has neither the staff nor the mandate to consider such large scale systems propositions. This at least is one of the things that ought to be fixed right away. If we can get together, I would enjoy going over this proposal with you point by point as there may well be a lot of specific items that would be useful to discuss. But I have no more general comments on it other than that it would be most effective in conjunction with an improved primary repository system in the first place.
- 12. I am sorry I don't have any more constructive suggestions with regard to computer access. Is there some facility at the University of Pennsylvania that you might get on to? I've only met Gil King rather obliquely at these Panel meetings and you probably know him better than I do. He has been rather reticent about the usefulness of present computer hardware in dealing with the information problem and it might be something of an education to him to see what you could do with it. I think I did bring up to you some time ago the possibility of subcontracting some of the work abroad. I know that Luca Cavalli finds he can do jobs like punching considerably more cheaply in Italy than over here. Is this worth pursuing? Unless the international aspect of it was more trouble than help I would bring up Cavalli's name to you as a potential director of ISI. You should have formed some judgments about him yourself from having met him.
- 13. I hope this finally covers the backlog of our correspondence; if I have left anything out please let me know.

Yours sincerely,

Joshua Lederberg Professor of Genetics

P.S. You mentioned something about the problem of dealing with journals—not being able to mark them up. But suppose you use a fluorescent ink or pencil that left an essentially invisible trace? You would have to set up the editing and reading work under some special lamps, but once these were set up I don't think they would be particularly difficult to work under. And I even think we could get some semi-volatile inks that would disappear completely in the course of time. I am sure that someday we are going to use selective color and fluorescence printing as a means of facilitating multiple coordinate scanning, but meanwhile I don't think there would be a tremendous problem in meeting your immediate requirements.

14. One thing I do need your help on is some advice on what to recommend as the basis of decision for the depository proposal. I have my own ideas on this, of course, but whom do you think should be consulted before the government could decide to go ahead with setting up the service? The NIH, even if it wanted to--and it may take quite a bit of persuading!--couldn't just go ahead and do it. On the other hand, if they tried clearing it with every biologist or every biological journal we obviously would get nowhere, which is doubtless the reason for the present state of affairs.